WHAT IS CLAIMED IS:

1. An electrolytic capacitor comprising:

(a) a capacitor element having a positive electrode, a negative electrode, and a solid organic conductive material disposed between said positive electrode and said negative electrode,

(b) an electrolyte,

(c) a case for accommodating said capacitor element and said electrolyte, and

(d) a sealing member disposed to cover the opening of said case.

2. An electrolytic capacitor of claim 1, wherein said positive electrode comprises a metal foil and a dielectric oxide film formed on the surface of said metal foil, and has a valve action.

3. An electrolytic capacitor of claim 1, wherein said case is formed of a tubular metal having a bottom.

4. An electrolytic capacitor of claim 1, wherein said solid organic conductive material has an organic semiconductor.

5. An electrolytic capacitor of claim 1, wherein said

solid organic conductive material has a conductive polymer.

6. An electrolytic capacitor of claim 1, wherein said solid organic conductive material has an organic semiconductor and a conductive polymer.

7. An electrolytic capacitor of claim 4, wherein said organic semiconductor has at least one of 7,7,8,8-tetracyanoquinodimethane complex and its derivatives.

8. An electrolytic capacitor of claim 5, wherein said conductive polymer has a polymer of at least one monomer selected from the group consisting of pyrrole, aniline, thiophen, ethylene dioxythiophen, sulfonated aniline, sulfonated pyrrole, sulfonated thiophen, sulfonated ethylene dioxythiophen, and their derivatives.

9. An electrolytic capacitor of claim 5, wherein said conductive polymer has at least one polymer selected from the group consisting of liquid-phase chemical polymerization composition, vapor-phase polymerization composition, liquid-phase electrolytic polymerization composition, and residual dry polymer of soluble polymer solution.

10. An electrolytic capacitor of claim 5, wherein said conductive polymer has at least one polymer formed by chemically polymerizing selected from the group consisting of polypyrrole, polyethylene dioxythiophen, and polyaniline.

11. An electrolytic capacitor of claim 5, wherein said conductive high polymer has at least one polymer formed by electrolytically polymerizing selected from the group consisting of polypyrrole, polyethylene dioxythiophen, and polyaniline.

12. An electrolytic capacitor of claim 5, wherein said conductive polymer has a residual dry polymer of soluble sulfonated polyaniline solution.

13. An electrolytic capacitor of claim 1, wherein said solid organic conductive material has at least one of organic semiconductor and conductive polymer, and a residual dry polymer of soluble sulfonated polyaniline solution.

14. An electrolytic capacitor of claim 1, wherein said electrolyte has organic solvent, and at least one electrolytic substance of organic salt and inorganic salt dissolved in said organic solvent.

15. An electrolytic capacitor of claim 14, wherein said solid organic conductive material is swollen in said organic solvent.

16. An electrolytic capacitor of claim 14, wherein said electrolyte has an electrolytic substance, and the base component of said electrolytic substance has a hydrogen ion concentration of 1.0×10^{-13} mol/dm^3 or more in 1 wt.% aqueous solution of the base or hydroxide of the base.

17. An electrolytic capacitor of claim 14, wherein said electrolyte has at least one selected from the group consisting of a compound having alkyl subsistent amidine group, quaternary salt of compound having alkyl substituent amidine group, tertiary amine, and ammonium.

18. An electrolytic capacitor of claim 17, wherein said electrolyte has quaternary salt of compound having alkyl subsistent amidine group, the alkyl substituent of said quaternary salt of the compound having alkyl subsistent amidine group is one of alkyl group and aryl alkyl group with 1 to 11 carbon atoms, and the compound having the amidine group of said quaternary salt of the

compound having alkyl substituent amidine group is at least one selected from the group consisting of imidazole compound, benzoimidazole compound, and alicyclic amidine compound.

19. An electrolytic capacitor of claim 14, wherein said electrolyte has at least a quaternary salt of the compound having alkyl substituent amidine group selected from the group consisting of:

1-methyl-1,8-diazabicyclo [5,4,0] undecene-7,

1-methyl-1,5-diazabicyclo [4,3,0] nonene-5,

1,2,3-trimethyl imidazolinium,

1,2,3,4-tetramethyl imidazolinium,

1,2-dimethyl-3-ethyl-imidazolinium,

1,3,4-trimethyl-2-ethyl imidazolinium,

1,3-dimethyl-2-heptyl imidazolinium,

1,3-dimethyl-2-(-3' heptyl) imidazolinium,

1,3-dimethyl-2-dodecyl imidazolinium,

1,2,3-trimethyl-1,4,5,6-tetrahydropyrimidium,

1,3-dimethyl imidazolium,

1-methyl-3-ethyl-imidazolium, and

1,3-dimethyl benzoimidazolium.

20. An electrolytic capacitor of claim 14, wherein said electrolyte has at least one property selected from

the group consisting of:

(1) boiling point is 200℃ or more,

(2) electric conductivity at measuring temperature of 30℃ is 1.0 mS/cm or more, and

(3) spark ignition voltage is 80 V or more.

21. A manufacturing method of electrolytic capacitor comprising the steps of:

(a) fabricating a positive electrode,

(b) fabricating a negative electrode,

(c) forming a solid organic conductive material on the surface of said positive electrode, and

(d) disposing an electrode between said positive electrode having said solid organic conductive material and said negative electrode.

22. A manufacturing method of electrolytic capacitor of claim 21, wherein at said step (c), said solid organic conductive material is at least one of organic semiconductor and conductive polymer.

23. A manufacturing method of electrolytic capacitor of claim 21, wherein at said step (c), a solution containing a polymerizable monomer is bonded to the surface of said positive electrode, and said bonded monomer is

polymerized to form said solid organic conductive material.

24. A manufacturing method of electrolytic capacitor of claim 21, wherein said solid organic conductive material has at least one organic semiconductor of 7,7,8,8-tetracyanoquinodimethane complex and its derivatives.

25. A manufacturing method of electrolytic capacitor of claim 21, wherein at said step (c), a solution containing at least one monomer selected from the group consisting of pyrrole, aniline, thiophen, ethylene dioxythiophen, sulfonated aniline, sulfonated pyrrole, sulfonated thiophen, sulfonated ethylene dioxythiophen, and their derivatives is applied on the surface of said positive electrode, and said applied monomer is polymerized to form said solid organic conductive material.

26. A manufacturing method of electrolytic capacitor of claim 21, wherein at said step (c), a solution containing a polymerizable monomer is applied on the surface of said positive electrode, and said applied monomer is chemically polymerized in liquid phase to form said solid organic conductive material.

27. A manufacturing method of electrolytic capacitor

of claim 21, wherein at said step (c), said a polymerizable monomer is brought into contact with the surface of said positive electrode in a vapor-phase atmosphere of said polymerizable monomer, and polymerized in vapor phase to form said solid organic conductive material.

28. A manufacturing method of electrolytic capacitor of claim 21, wherein at said step (c), said positive electrode is immersed in a liquid having a polymerizable monomer, said monomer is electrolytically polymerized to form said solid organic conductive material on the surface of said positive electrode.

29. A manufacturing method of electrolytic capacitor of claim 21, wherein at said step (c), said solid organic conductive material of at least one of organic semiconductor and conductive polymer is formed, then said positive electrode forming said solid organic conductive material is immersed in a soluble polymer solution, and then it is dried and a residual dry polymer of said soluble polymer solution is formed on the surface of said solid organic conductive material.

30. A manufacturing method of electrolytic capacitor

of claim 21, wherein said solid organic conductive material is in a state swollen in said electrolyte.

31. A manufacturing method of electrolytic capacitor of claim 21, wherein said organic conductive material has at least one organic semiconductor of 7,7,8,8-tetracyanoquinodimethane complex and its derivatives.

32. A manufacturing method of electrolytic capacitor of claim 21, wherein said solid organic conductive material has a polymer formed from at least one monomer selected from the group consisting of pyrrole, aniline, thiophen, ethylene dioxythiophen, sulfonated aniline, sulfonated pyrrole, sulfonated thiophen, sulfonated ethylene dioxythiophen, and their derivatives.